

On the interplay of factors licensing French Modal Ellipsis in extraction contexts

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Though Romance languages generally don't allow for VPE after auxiliaries, cf. (1), French can display an elliptical structure after modal verbs, as illustrated in (2) with the modal verb *pouvoir* ('can'): since Busquets and Denis (2001), these constructions are known as French Modal Ellipsis (FME). They compete with another one involving an object clitic pronoun instead of a gap, illustrated in (3): we call this latter construction French Modal Anaphora (FMA).

- (1) *Marie a chanté mais Paul n'a pas.
Mary has sung but Paul has not.
- (2) Marie viendra, mais Paul ne peut pas.
Mary will come, but Paul PRT can not
'Mary will come but Paul can't'
- (3) Marie viendra, mais Paul ne le peut pas.
Mary will come, but Paul PRT it.can not
'Mary will come but Paul can't'

Ellipses such as (2) have been claimed to rely on PF-deletion of the elided constituent (see Busquets & Denis, 2001; Dagnac 2010, 2019; Authier 2011), due to their extraction properties: unlike FMA, FME can be extracted from, cf. (4), just as full sentences do: only a full-fledged unpronounced structure (*vs* an anaphorical pronoun in FMA) can account for the availability of a base position for the moved WH-phrase.

- (4) Je sais quels livres Léa peut lire et quels livres elle ne (*le) peut pas. FME vs FMA
I know which books Lea can read and which books she PRT (it) can not
'I know which books Lea can read and which books she can't (*it)'

However, so far, this crucial argument relies on non-controlled grammaticality judgements. Since the extraction data are crucial to the analysis, we conducted a pilot experimental study (controlled judgement task on a 10-point scale) to check them in both relative and embedded interrogative clauses. It confirmed that extraction out of FME is judged grammatical in elided relative and interrogative clauses while highly degraded in FMA contexts (mean judgements: interrogative 3.5 (FMA) vs 7.58 (FME) ; relative 2.43 (FMA) vs 8.16 (FME), all differences statistically significant). But it also showed that acceptability varies depending on the precise status of the extracted object, in particular its DO vs IO status and the form of the WH-P.

To assess the theoretical impact of these variations, we first set up a finer-grained experiment designed to isolate the effect of these factors in relative clause contexts. The experimental items follow a 2x3 design with the factors STRUCTURE TYPE (Complete vs. FME vs. FMA) and WH-PHRASE (*que* vs. *auxquels*). There are 6 versions of each item, labelled from A to F below, with 12 DO and 12 IO extracted items, each presented with a context (cf. Table 1); the animacy of the objects is controlled for. The PF-deletion analysis predicts that (1) FMA items are ungrammatical; (2) FME items are as grammatical as Complete sentences. The *auxquels* items in the context of DO extraction (A, C, E) are ungrammatical items: they will be our benchmark for ungrammaticality. We ran with Ibex Farm (Drummond, 2013) an online acceptability questionnaire containing the 24 experimental items combined with 36 filler items (including 4 fully agrammatical sentences and 24 items of an other non related experiment). Sentences were presented in a Latin Square design, which means that participants were exposed to the 6 conditions, but never to the same item in several conditions. The 45 native speaker participants were told to judge the acceptability of the 60 sentences using a 10-point scale (0=fully unacceptable, 10=fully acceptable).

The mean of the ungrammatical extracted DO items (A, C, E) is 1.1. The extracted DO contexts resorting to *que* fully confirm predications (1) and (2): complete sentences and FME are judged fully grammatical in conditions (B) and (D), while FMA is ruled out (means: COMP-QUE= 8.5; FME-QUE = 8.9; FMA-QUE = 2.1). When it comes to IO contexts, however, things are less clear-cut. First, as predicted by the PF-deletion analysis, FME is judged

significantly better than FMA (6.2 vs. 2.8), but FME is clearly less acceptable with IO than with DO. Second, when the WH-P is *que*, Complete items are judged ungrammatical whereas FME items are judged grammatical (COMP-QUE=2.3 vs. FME-QUE=6.9). This contrast, albeit expected, is challenging for the PF-deletion analysis and calls for a more precise account of the extraction mechanism in French ACD contexts. Third, when the WH-P is *auxquels*, the Complete and FME means are both over 5, but the FME items are rated significantly worse than the complete sentences (FME-AUXQUELS=5.6 vs. COMP-AUXQUELS=7.8). However, an unexpected contrast surfaces when looking at IO animacy: FME and Complete items have high acceptability means when the IO is inanimate (FME-AUXQUELS=8.7 vs. COMP-AUXQUELS=7.3), whereas the means are significantly different with an animate IO (FME-AUXQUELS=4.5 vs COMP-AUXQUELS=7.3). Surprisingly, the theoretical claim appears to be supported by inanimate IO extraction but not by animate IO extraction. All these observations are confirmed by the statistical analysis of the acceptability judgments, conducted with a mixed-effect linear regression with random intercept for Items and Subjects.

Table 1	extracted DO	extracted IO
	[Ludovic a promis de jouer plusieurs morceaux de musique à ses collègues, mais il n'est pas encore au point sur tous.]. Il leur jouera tous les morceaux ...	[Lionel veut modifier l'organisation de son service, mais il y a des résistances. La prochaine semaine est décisive, et il a décidé d'avancer malgré tout.]. Il imposera son avis à tous les collègues ...
COMP-AUXQUELS (A)	auxquels il pourra leur jouer	auxquels il pourra l'imposer
COMP-QUE (B)	qu'il pourra leur jouer	qu'il pourra l'imposer
FME-AUXQUELS (C)	auxquels il pourra	auxquels il pourra
FME-QUE (D)	qu'il pourra	qu'il pourra
FMA-AUXQUELS (E)	auxquels il le pourra	auxquels il le pourra
FMA-QUE (F)	qu'il le pourra	qu'il le pourra

To confirm the FME vs. FMA results and to test whether this animacy effect is triggered by the special nature of ACD constructions or is relevant for the general analysis of FME, we will conduct another experiment, this time in embedded interrogative contexts. The general design parallels the previous one, the factors being STRUCTURE TYPE (Complete vs. FME vs. FMA) and WH-PHRASE (interrogative pronoun vs. determiner). There are 6 versions of each item, with 8 DO and 16 IO extraction items; we control for animacy by having half of the objects animate and the other half inanimate. The results of this second experiment are expected to confirm the FME vs. FMA contrast, and to provide new insight on the interplay between factors licensing/facilitating FME in the extraction contexts: the status of the extracted complement (DO vs. IO; animate vs. inanimate) and the nature of the WH-phrase.

Table 2	extracted DO	extracted IO
	[Context.] Il sait déjà très bien...	[Context] Il sait très bien...
COMP-PRO	lesquels il pourra leur jouer et lesquels il ne pourra pas leur jouer	auxquels il pourra imposer son point de vue et auxquels il ne pourra pas l'imposer
COMP-DET	quels morceaux il pourra leur jouer et quels morceaux il ne pourra pas leur jouer.	à quels collègues il pourra imposer son point de vue et à quels collègues il ne pourra pas l'imposer.
FME-PRO	lesquels il pourra leur jouer et lesquels il ne pourra pas.	auxquels il pourra imposer son point de vue et auxquels il ne pourra pas
FME-DET	quels morceaux il pourra leur jouer et quels morceaux il ne pourra pas	à quels collègues il pourra imposer son point de vue et à quels collègues il ne pourra pas.
FMA-PRO	lesquels il pourra leur jouer et lesquels il ne le pourra pas	auxquels il pourra imposer son point de vue et auxquels il ne le pourra pas
FMA-DET	quels morceaux il pourra leur jouer et quels morceaux il ne le pourra pas	à quels collègues il pourra imposer son point de vue et à quels collègues il ne le pourra pas.

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